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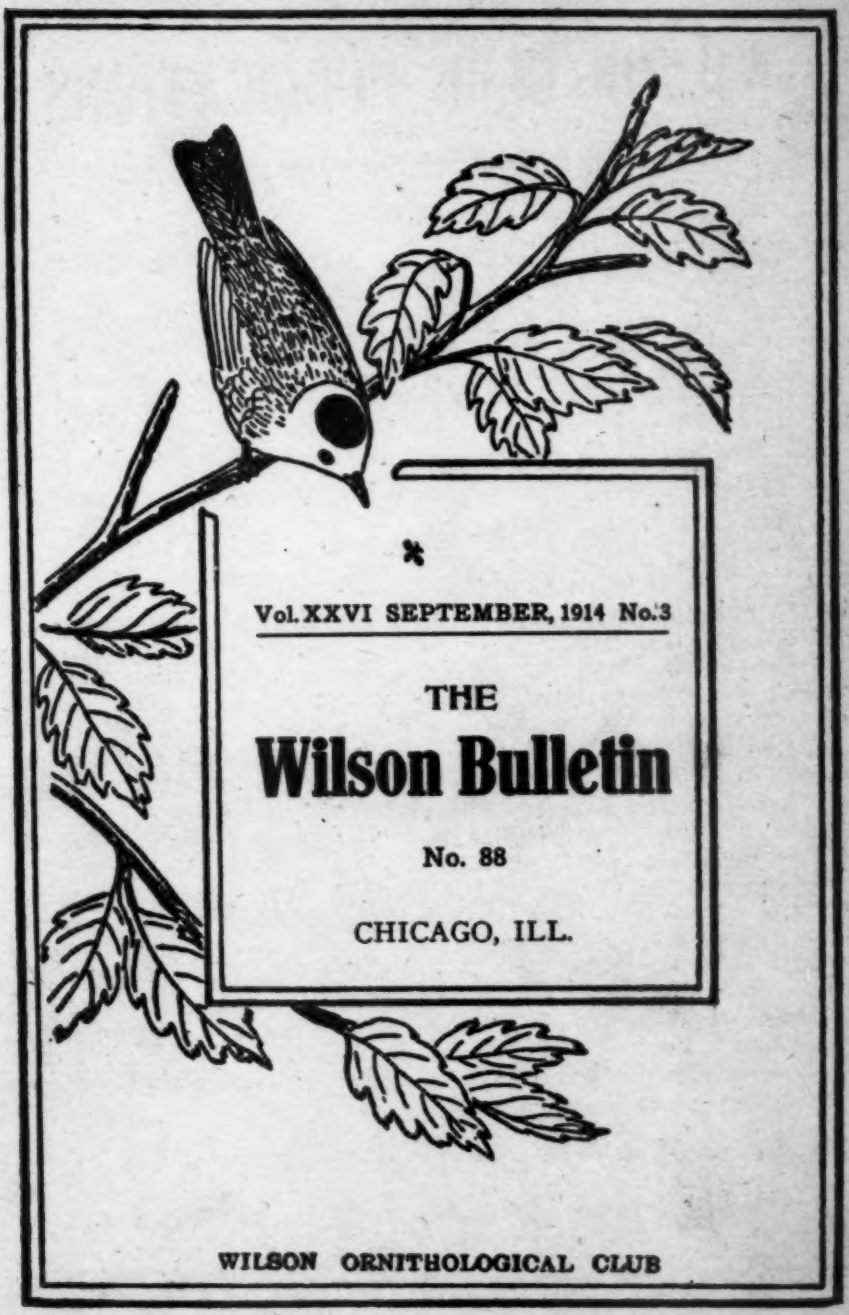

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THE Wilson Bulletin

No. 88

CHICAGO, ILL.

WILSON ORNITHOLOGICAL CLUB

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THE WILSON BULLETIN

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GENERAL SITE OF PROTHONOTARY WARBLER'S NEST
At least four of the cans on the trees are to be seen

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VOL. XXVI SEPTEMBER, 1914. No. 3

OLD SERIES VOL. XXVI. NEW SERIES VOL. XXI.

THE PROTHONOTARY WARBLER AT LAKE OKOBOJI, IOWA.

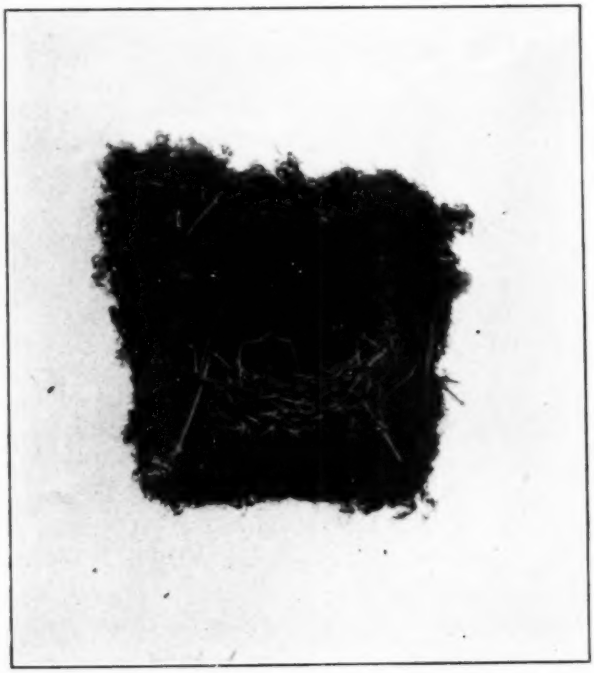
By T. C. Stephens.

On July 4, 1914, our entire camp* was taken on an excursion along the southwest shore of Lake Okoboji, Iowa. At noon the party was to eat lunch at a point on the west shore known as Elm Crest. They had been carried in relays across Emerson's Bay so that the first to reach the destination had some time at their own disposal before the last ones arrived.

As I came up I was met by Mr. H. C. Pollock who, with evident excitement, informed me that he had seen a bird which he thought must be a Prothonotary Warbler. I was naturally a little skeptical as to the identification, but nevertheless anxious to see what he had found.

We were in the immediate vicinity of a summer cottage owned by Mr. A. J. Goodell, which had, as yet, not been opened for the season. It was surrounded by a heavy growth of timber, mostly oaks. Very soon we heard a clear, but gentle, "*weet, weet, weet, weet,*" and Mr. Pollock exclaimed, "There is the bird"; and it was but a moment till we had our glasses focused upon her.

* Students of the Macbride (Iowa) Lakeside Laboratory.



NEST OF PROTHONOTARY WARBLER REMOVED FROM THE CAN

The head, throat, and breast appeared to be a bright lemon yellow (the orange tinge was not noticeable at this distance); the wings and tail were dark, the former appearing to have a distinctly bluish cast. Above the nearly black tip of the tail there was a distinct band of white. The black bill was unusually long for a warbler. As we watched a second bird came within view.

These characters, so clearly recognized, convinced us at once that we had, indeed, stumbled upon a pair of Prothonotary Warblers (*Protonotaria citrea*). My next thought was that the birds must be breeding; and after about five minutes' close watching, I saw one of the birds fly low and direct to an empty tin can nailed to the trunk of a tree not more than ten feet from the cottage. Immediate examination revealed a single young bird, which was almost ready to leave the nest.

The location of the nest was a thickly wooded and elevated point of land projecting into the lake on the west shore. At the highest elevation, but scarcely over fifty feet from the shore line, stood the cottage. The underbrush had been cleared away from the front of the cottage, and at the sides for a distance of perhaps a rod.

We now noticed that on the trees around the dwelling, at intervals of ten to fifteen feet, there had been put up empty tomato cans for the use of birds—especially the house wrens, which are so abundant around the lake. These were mostly at about the height of a man's uplifted hand, viz., about seven feet. The warblers had selected one whose opening faced the south.

The photograph will describe the external appearance of the nest site sufficiently.

Subsequently the nest was removed from the can for examination. Only two materials seemed to enter into its composition to any noticeable extent. The great bulk, or "foundation," consisted of a tangled mass of moss. The lining consisted of dried grass of rather coarse grade. Roughly, the cavity of the nest measured 70 mm. in diameter.

While we were watching the birds, the owners of the cottage arrived for their summer sojourn. We explained to them that the grounds were already tenanted, and found them to be very much interested in the welfare of their distinguished bird guests.

The next day Mr. Goodell walked a good mile around the lake shore, about noon, to tell me that the young warbler had left the nest that morning about nine o'clock, and that they were keeping track of its whereabouts until I could arrive. About two o'clock the young bird was banded with the number 16291, and returned to its home—the tin can—where it seemed perfectly contented to remain. By this procedure we hoped to entice the parents to visit the nest and feed, in order that we might make photographs. In this we were entirely successful, for within five minutes one of the parents had discovered the young and visited it with food.

The feeding visits were then continued with frequency during the remainder of the afternoon, and we made over a dozen exposures of the old bird in the process of feeding. Unfortunately, all but two of the plates were underexposed. The photograph here reproduced shows this bird in a somewhat different attitude from that usually depicted in the illustrated accounts of the species.

Usually, if undisturbed, the parent flew directly to the nest, alighting on the disc of tin cut out for an entrance and bent into a horizontal position. However, if at all alarmed the approach was made more cautiously. It would, under such circumstances, alight on the tree trunk or small twigs ten or fifteen feet above the nest, and descend by hopping from twig to twig; or, by simply clinging to the bark of the tree, and hopping, neither backward nor head-first, but sidewise. Of course it is quite possible that the two methods of approaching the nest here mentioned may have belonged to the male and female birds respectively, but in the short time the sexes were not distinguished.

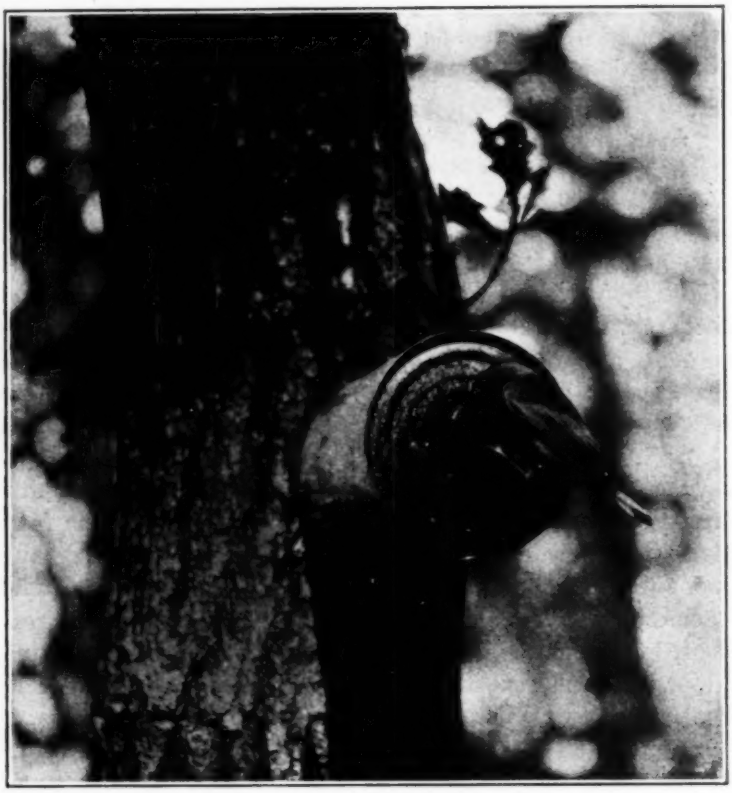
No effort was made to recognize the food brought, but in one instance a green larva was noticed. The photograph also shows some insect in the bird's bill.

It was very evident from the old bird's actions that she was trying to coax the young one out of the nest. She would remain nearby twittering and calling for a considerable time before going to the nest to deliver the food she carried. The young bird left the nest the following day (Monday) and neither young nor old birds were seen again, although the vicinity of the nest was visited a number of times later. Although no other young were seen, it is quite likely that the one we found was the last one of a larger brood to leave the nest.

The distribution of the Prothonotary Warbler in Iowa does not seem to be fully known. It has been observed along the Missouri river as far north as Mills county, Iowa, and possibly at Sioux City. Its plentiful occurrence along the upper Mississippi river is well recorded by Dr. T. S. Roberts (see the Auk, XVI, 1899, pp. 236-246). The only published account, apparently, of its distribution within the state of Iowa occurs in Anderson's *Birds of Iowa,* from which the following paragraph may be quoted:

"It is a bird of southern distribution and is only tolerably common along the bottom lands of the larger rivers in southern Iowa. It reaches to about its northern limit on the Iowa river in Johnson county, on the Cedar river in Blackhawk county (Peck), and the Des Moines river in Webster county (Somes). Dr. Trostler reports it as a common summer resident, but becoming scarce, in Mills county on the Missouri, while Dr. Rich reports it as rare at Sioux City. Dr. B. H. Bailey shot two males at Lansing, Allamakee county, Iowa, in 1904. The most northern record outside of the Mississippi bottoms was one male, seen along the Des Moines river in Kossuth county, by W. H. Bingaman, May 20, 1901. The bird was not taken, but identity is positive, Mr. Bingaman having found many nests in southern Illinois."

Dr. Roberts (Auk, XVI, p. 240) refers to an "indefinite record" for the region of Heron Lake, Minnesota, only about twenty-five miles directly north of Lake Okoboji, but which he thought was a mistake in identity. I have no information as to the authority for this record and am unable to judge as



PROTHONOTARY WARBLER ABOUT TO FEED YOUNG

to its value. This Okoboji record, however, would tend to make the Heron Lake record probable.*

An interesting problem which naturally arises is as to the route by which these birds reached the lake region (referring solely to the Okoboji record). It is not a great distance along the Des Moines river from Webster county, where the species has been recorded, to the lake region. But the Des Moines valley lies on the east of the divide, while the lakes are on the west; and there are no streams or valleys connecting. The actual distance across from the Des Moines valley to the lakes at this point would only be about eighteen miles.

However, if the birds follow the river valleys strictly in their migration (and, consequently, in extending their range) we must look to the Missouri river drainage basin for the route of the Okoboji birds. From the investigations of Loucks, Roberts, Adams, and others, it seems to be pretty well established that the species in question is very closely restricted to the river valleys in its movements, as well as its breeding.

The outlet of Lake Okoboji is through a chain of several smaller lakes (including the Upper and Lower Gar lakes, and Lake Minnewashta) into a shallow and swampy creek which empties into the Little Sioux river about a mile below the town of Milford. This river, after traversing the northwestern portion of Iowa, finally empties into the Missouri river about midway between Sioux City and Council Bluffs.

Taking into account the Missouri river records above referred to, it seems very probable that the Prothonotary Warbler has pushed up the Little Sioux valley to the lake region of Iowa. We may, therefore, await with some interest reports from points in the Little Sioux valley with reference to this species.

The authors cited are as follows:

1. Loucks, W. E. The Life History and Distribution of the Prothonotary Warbler in Illinois. Bull. Ill. State Lab. Nat. Hist., IV, 1895, pp. 10-35.

* In response to an inquiry Dr. Thos. S. Roberts writes me under date of August 21, 1914, in which he states that the Heron Lake Record has never been published otherwise than by the negative reference in his article above cited. He also assures me that his reference to the bird in this locality must not be considered a "record," for he placed no reliance on the information as it reached him.

2. Roberts, Dr. Thos. S. The Prothonotary or Golden Swamp Warbler *(Protonotaria citrea)* a Common Summer Resident of Southeastern Minnesota. Auk, XVI, 1899. pp. 236-246.

3. Adams, C. C. The Migration Route of Kirtland's Warbler. Bull. Mich. Ornith. Club, V, 1904, pp. 14-21.

4. Anderson, R. M. The Birds of Iowa. Davenport, Iowa, 1907.

Sioux City, Iowa.

HABITS OF THE OLD-SQUAW (*HARELDA HYEMALIS*) IN JACKSON PARK, CHICAGO.

BY EDWIN D. HULL.

INTRODUCTION.

The following notes are the result of three winters' study of the habits of the Old-squaw in Jackson Park, Chicago, Ill., from 1912 to 1914 inclusive. It is regretted that observations could not have been made for a few years more, and it is conceivable that exceptions to some of the statements contained herein might be made through additional study, but it seems advisable to publish what observations there are, as the stock of information concerning our waterfowl is generally conceded to be woefully deficient.

PREVIOUS LITERATURE.

I have been able to find but two extensive papers on the habits of this bird, both of which have been noted carefully. In 1892 G. H. Mackay (Auk 9: 330-337. 1892) gave an excellent account in a general way of the species in New England, where the birds were observed almost exclusively on salt-water. In 1913 a more intensive study was recorded by J. G. Millais (British Diving Ducks, Vol. 1, 112-131. 1913). The notes here, however, relate mainly to the habits of the species in the Old World, and likewise on salt-water. No

extended account of the habits of the species inland seems to have been written, and it is in part to supply this deficiency that the following notes are recorded.

ENVIRONMENT.

Jackson Park is noted for its beautiful chain of lagoons, which bears a striking resemblance to a large river. Both ends of the chain are connected with Lake Michigan, at the connections being spanned by bridges. The lagoons in the main are broad and fairly deep at the middle, but become very narrow in places, more especially at the several bridges. Along the sides in shallow water are broad zones of the crisped pondweed (*Potamogeton crispus*), a European plant, not long in this region, but already exceedingly abundant and vigorous. With this species occur a few less conspicuous plants. Rocks have been thrown in about the edges in places. The lake itself which borders the park on the east is sheltered much by a harbor and somewhat by piers built into it. The plants, rocks and piers constitute a very favorable habitat for immense swarms of silvery minnows (*Notropis atherinoides*), which seem to be almost if not entirely the sole source of food for the Old-squaw in this locality.

OCCURRENCE AND ABUNDANCE.

Where two or more birds are found together they do not appear until severe weather sets in, and the lake is covered more or less with ice, but leaving several open places here and there, especially about the piers, where the birds are able to obtain food. My earliest record is January 28, 1912, when eleven were seen, and the latest February 27, 1913, when four were seen. The occurrence of flocks and twos is certainly determined by the weather. Solitary individuals may appear much earlier and remain much later. My earliest record is December 14, 1913, and the latest May 6, 1912. Another very late record is April 8, 1914. In two cases at least these early or late birds appeared following a cold wave, but they were associated with the Lesser Scaup, and in all

probability were not so much dependent on the weather as on the migrations of the Scaups, less boreal in habit and the most abundant ducks in this region. They may, however, remain after the Scaups have left for the south, and also leave ahead of the Scaups in the spring, after sojourning with them a day or more, so that the weather plays a rôle even here, but is not the only factor.

The ducks in twos or more keep to the lake or more rarely in the harbor, and only the solitary ducks enter the lagoons, and not then except when they occur with the Scaups. In midwinter the lagoons are usually frozen solidly over, but exceptions occur, so that the absence of the flocks from them cannot be always thus explained.

The birds seem to be growing scarcer every year. The size of the flocks is decreasing rapidly, and single birds are very common. The largest flock noted was eleven in 1912, and the next largest six in 1913.

SOCIAL LIFE.

The birds when more than one keep to themselves, but when isolated are quite likely to be seen with other species, although occasionally utterly alone. If the birds are mated at this season of the year it is hardly possible to pick out the pairs on account of all the birds keeping together. Furthermore, even numbers, which might indicate pairs, are not one-half so common as odd numbers, which show, of course, at least one unmated bird. The birds seen in twos are not paired, either, so far as can be ascertained. Single birds have been found associated with the Lesser Scaup and the American Goldeneye, particularly during periods of inactivity, although when feeding they may desert the other species. Quite often the Scaups feed in too shallow water, as along the edges of the lagoons, to suit the tastes of the Old-squaw, while the Goldeneyes often feed in water entirely too deep. A bird seen February 17, 1914, with a small flock of American Goldeneyes out in the lake quite a distance from the piers left the flock when it wanted to feed, and came to the piers, where the water was much more shallow, but after its hunger was

satisfied returned to its companions. Even when the Golden-eyes were diving vigorously in the deeper water the Old-squaw made no attempt to imitate them. In their association with these other species the Old-squaws keep somewhat aloof, and never display the same familiarity with the birds of a different species as do the individuals of a single species toward each other. They generally keep a certain distance away from the birds of another species, and may even attack them if they get too close; similarly the birds of another species may attack them.

FOOD.

The feeding ground is a place apart, but mainly close to the resting ground, so that it is reached by a brief swim. After feeding the birds return to their resting ground. When a suitable feeding locality is once found the birds return to it again and again, and likewise the same resting ground is repeatedly chosen.

The food no doubt is almost entirely animal, and would seem to be restricted to a single species of fish, the silvery minnow, a long slender fish which fairly swarms about the piers and in the lagoons. The stomach of an adult female found floating in a lagoon April 1, 1912, contained approximately 140 of these minnows, all entire, besides many fragments of the same fish, but no other food. The fish averaged about two inches in length. Another fish very abundant in this region is the yellow perch, but it is rough and spiny, and is no doubt avoided, as so much better food can be had. Whether any vegetable food is utilized is uncertain. An adult male was seen to be nibbling along the sides of a bit of loose piling, as if scraping off algae, but this may not have been the case.

The food is swallowed under water. Millais says concerning a pair of tame birds that they swallowed pieces of food smaller than a minnow below usually, while larger pieces were brought to the surface and vigorously shaken. I have yet to see, however, any bringing of food to the surface of the water.

DIVING.

Millais says that in diving they use the feet only, but according to Chapman after Townsend they use their wings (Birds of Eastern North America, p. 198, 1912). My own observations confirm those of Townsend. March 13, 1914, I was fortunate in witnessing the diving of an exceedingly tame bird about the piers. In this bird the movement of the wings was very plainly visible for some time as it dived obliquely in the clear water.

In all but one instance the birds spread their wings and disappear almost immediately, but the bird of March 13, 1914, just noted, adopted a much more leisurely method. It first put its head under water, then moved forward a few feet with wings folded, then flapped its wings a few times, moving forward all the while, and finally disappeared beneath the surface. In feeding this action was invariable in all the observations made. When frightened, however, this bird dove as quickly as any other. The diving as observed in this bird, as I have stated, was in a very oblique direction. The bird started many feet out, diving towards the pier, and on reaching it turned and worked along the pier for some distance before rising to the surface. Once it was seen to dash just beneath the water for the pier, and on reaching it come at once to the top. In diving much splashing is made, which is not the case in a duck which dives with folded wings, as in the Lesser Scaup. The time spent under water was noted in nineteen instances, the maximum being twenty-five seconds, minimum ten seconds, average about eighteen seconds. Food was probably easily obtained, however, and the water relatively shallow. No doubt a much longer time could be endured. Millais gives the usual time as being from thirty seconds to one minute.

VOICE.

In flocks the Old-squaws are noisy birds, as noted by Mackay, and their cries are adequately described by him. I have found single birds, however, with but one exception, absolutely silent. The single exception was the bird occur-

ring with the Goldeneyes February 17, 1914, cited under "Social Life." This bird in leaving its companions for the piers to feed, on its way called a few times at fairly definite intervals, a subdued call of two notes, best described, perhaps, as *o-onc*. The significance of this brief cry could not be determined with certainty. It was noted that the bird in going to its feeding ground was alert, so that this call may have indicated a slight alarm.

FLIGHT.

Birds in flocks are often very active, but single birds are inclined to fly very little if at all. Even when badly frightened they will try to escape by diving instead of taking wing. In spring, however, when they are about to depart for the north, they become more active. The bird seen April 8, 1914, took wing when scared, and another seen March 22, 1914, would sometimes fly from its feeding ground about the piers farther out into the lake, where it rested. But ordinarily single birds will not fly even when the other ducks with which they are associated take flight. This unwillingness to fly would seem to bear no relation to age, for a bird which could not be induced to take flight under any circumstances was an adult male upon which I made observations from December 14 to December 28, 1913 (see Auk 31: 244, 245. 1914). According to Millais, however, young birds will not rise on their first arrival from the north, differing in this respect from the adults.

BATHING.

Bathing is not undertaken except after diving for food, and in one instance, where the bird made a single dive, no bathing followed at all. Occasionally after feeding the bird delays bathing in order to preen, but more often preening follows bathing. In cases of prolonged feeding bathing may take place at different intervals, a period of diving being followed by a period of bathing. Once after a bird had bathed it climbed out on a bit of piling, and on getting off bathed again. Bathing very seldom takes place on the feeding

ground, the action being delayed until the resting place is reached. In one instance, however, a bird was seen to bathe while coming from its feeding ground.

Bathing is a very leisurely process at first, being merely a dipping of the head under water, but soon increases in vigor, being accompanied by much flapping of wings and splashing of water, followed in all instances by preening, whether or not a preliminary preen was undergone before bathing commenced. In only one instance was bathing so vigorous as to carry the bird completely under the surface.

DRINKING.

Drinking takes place but seldom, only two instances having been noted. The bird seen from December 14 to December 28, 1913, was seen to drink twice in rapid succession about 40 minutes after feeding, and another very hungry bird seen March 13, 1914, was correspondingly thirsty, drinking again and again between dives, often several times in succession. Occasionally, however, the bill was merely dipped in the water, the head not being thrown back nor the swallowing reflex taking place afterward. Probably in most cases enough water is taken in with the food.

PREENING.

Preening always takes place after bathing, and occasionally before, as I have said, and also at various intervals throughout the day. The belly feathers are not given the same attention that the other feathers are. In one instance the bird would not preen these feathers until after it had climbed out on a piling, and in another case the bird stood on its tail in the water in the manner cited by Millais. These were the only instances noted, while the feathers of the back and sides undergo a thorough preening continuously.

PERCHING.

While the birds never come out on the shore, keeping strictly to the water, a bit of piling stuck in the bottom of

a lagoon in a slanting direction, with only a portion of the top out of water, was made much use of by one bird to preen and rest. While on the piling, however, the bird was always more or less alert, seeming to realize that it was not altogether in its proper element, and although it would squat down after a while it was never seen to go to sleep, at least it never put its head under its wing, as it did so often in other situations, although the head was often drawn down snugly between the shoulders.

MORTALITY.

My observations on this point agree very closely with those of Mackay, the deaths happening to females and immature males. Along the south shore of Lake Michigan, the Indiana side, I have seen a few dead adult males, but in every instance the bodies were so torn by gulls that the cause of death could not be determined. March 31, 1914, I found an adult male on the beach at Jackson Park, in good condition, but with very little fat. There were no wounds apparent except a bad one on the back, which was probably made by a gull, which bird may have been the cause of the Old-squaw's death, although it does not appear likely. Dead birds have been found in all winters except that of 1912-1913, the mildest of all. But not even in the severest winters have I found a bird that was starved to skin and bones, although besides the adult male just referred to, none of them possessed any fat.

THE KENTUCKY WARBLER IN COLUMBIANA COUNTY.

By H. W. Weisgerber, Salem, Ohio.

I am fully convinced that the Kentucky Warbler is firmly establishing itself along the northern boundry of Columbiana County, for a bird could scarcely appear for three successive years in a given locality and not continue to do so, provided, of course, that conditions remained the same.

SITE OF KENTUCKY WARBLER'S NEST
The nest is on the ground beneath the stick, as indicated by circle

My first experience with the species was on May 5, 1907, which was during the early years of my bird study career. But before going on I wish to relate a rather funny incident with that first observation. It was on a lovely Sunday afternoon and I had gone to the woods—just for a walk and without my opera glasses—not expecting to find anything rare. I found the bird under the thick cover of brush in a low, wet spot in the woods. Across my path lay a large, partly decayed hickory log with a few short stubs of limbs still upon it. The bird was feeding about the earth-bank that still hid the buried roots, and in order to get a better view of it I stepped upon the log and then leaned rather heavily with my left hand upon one of the decayed limbs. Well, suddenly, and without warning, the limb gave way and I found myself astride the log, looking in the opposite direction from where the bird was feeding. As might be expected, the bird flew away and I failed to find him again.

It was in the height of the migration season of 1912 that I again saw him; this time in woodland nearer the city. I listed him several times during the "season," after which I did not visit the woods until fall. I had the same experience with him during the "season" of 1913, and while I suspected a breeding pair, I never found more than one bird—the male for he was in song.

During the 1914 "season" I had a collaborator, Mr. J. F. Machwart, of the high school faculty, whose great desire was to "list" a Kentucky Warbler, and very fortunately he found it on a rainy morning when I was not with him. I listed the bird the next morning and about every other morning during the "season." It was some time after the migration season that Mr. Machwart reported that he had seen a Kentucky Warbler with nesting material in her beak and that she was very much concerned about his presence.

On the afternoon of June 13th I was "hunting" with a camera, and while waiting for a Red-eyed Vireo to return to her nest a pair of Kentucky Warblers were greatly excited. This was the first time that I had ever seen a pair.

After she had disappeared in a brush pile she went to the

TWO YOUNG KENTUCKY WARBLERS IN NEST
Photo by H. W. Weisgerber, Salem, Ohio

nest with food. Then it was found out that I had been sitting within 10 feet of her nest and once during that time she had perched upon the stick above the nest. I did not see it during my first hunt for it. At this time the young birds were only a few days old and squirmed so much that they spoiled the negative of the nest.

I notified Mr. George L. Fordyce, of Youngstown, Ohio, of my find, and on the 18th he and Mr. John L. Young came to Salem and got to see the old and young birds. At this time, too, I obtained the negative of the young in the nest, for they were old enough to remain perfectly quiet.

On the next visit to the place the nest was empty and I trust that the young made a safe getaway. Later I got the nest and brought it home. It is a rather bulky affair composed of dead leaves, the most of which no doubt were on the ground and were simply pushed aside, while the nest proper is composed of wild grapevine bark, grass and rootlets with a lining of very fine rootlets and many horse hairs.

Prof. Wells W. Cooke, of the biological survey, in acknowledging my report says: "You are to be congratulated on finding the nest of the Kentucky warbler. It is a very rare bird in northeastern Ohio. We have probably six or ten records of it at different times and places, but no actual finding of the nest."

And here's a wish that they may continue to come and multiply and spread over adjacent districts so that other observers may list them. And in concluding may I suggest that the casual observer look closely at what he thinks are Maryland yellowthroats that he finds in the thick underbrush of the woodlands, and follow up all "oven-bird" songs that sound the least bit off tune? I verily believe that many observers have missed the Kentucky warbler on the two above suggestions.

SPRING MIGRATION (1914) AT HOUSTON, TEXAS.

BY GEORGE FINLAY SIMMONS.

For several years past, the writer has taken a particular interest in the migratory movements of the more common birds at Houston, Harris County, in southeastern Texas. During the spring migration of 1914, he made semi-weekly one-day trips into the woodlands and fields within a mile or two of the city limits with the special object of ascertaining as near as possible what relation, if any, existed between bird migration at Houston and the sudden changes of weather at that point.

It is to be regretted that trips could not be made each day during that season and the exact dates of arrival and departure ascertained. But the results obtained satisfy the writer that, as Prof. Wells W. Cooke has already stated,[1] local weather conditions on the day of arrival are minor factors in determining the appearance of a species at that place and time, and that the major factors in the problem are the weather conditions far to the southward, where the night's flight began.

The writer does find, however, that local weather conditions greatly affect the dates of departure of our migrants for their more northern summer homes, thus further strengthening the theory set forth in the last clause of the preceding paragraph.

Faunal Position.—Harris County, of which Houston is the county seat, lies well within the semitropic or Gulf strip of the Austroriparian zone of southeastern Texas. Houston lies on Buffalo Bayou in the southeast-central part of the county.

With very few exceptions, the notes were all taken on the south side of Buffalo Bayou, a coastal prairie region with few farms or ranches; the only timber in this section lies in strips from a quarter to a half mile wide along Buffalo and Bray's

[1] Cooke, Wells W. The Relation of Bird Migration to the Weather. Auk, Vol. XXX, April, 1913, pp. 205-221. Cf. first paragraph, p. 205.

Bayous, both of which flow eastward toward Galveston Bay, the latter skirting the city on the south and joining the former a few miles to the east. The remainder of the country is flat, uncultivated prairie, sprinkled with small ponds or grassy marshes.

A line drawn north and south through Houston would be the center of the United States; the city itself is a little south of New Orleans, Louisiana, and St. Augustine, Florida, and more than 200 miles south of California's southern boundary.

The majority of the walks were taken in two directions; the first to the west of the city along the Buffalo Bayou woods, the timber to the right and the prairie to the left, and the second to the south of the city, passing Bray's Bayou and its narrow strips of timber just after leaving Houston, and then across the extensive prairie to Taylor's Ranch, 7½ miles south of Houston.

Weather Conditions.—It would be far too tedious and of no especial value to go into details of the weather conditions, but before the reader can realize the truth of Prof. Cooke's theories as seconded by this paper, he must appreciate the unusual conditions which accompanied the migration.

January was 4.9° warmer than is usual for this month, the mean temperature being 58°, with the lowest at 32° and highest at 79°.

February was 1.4° warmer than is usual, the mean for the month being 53°. Notwithstanding the fact that this condition occurred, on seven days the mercury dropped suddenly to 32°, on the 7th falling to 24°, the coldest day of the whole winter.

On the other hand, March was 4.2° colder than usual, the mercury ranging from 36° to 80°, with a mean of 59°.

The mean temperature for April was 68°, 1.7° below the general average; lowest 38° and highest 86°.

Although the winter was quite dry, the whole of the migration season was unusually rainy, and during the early part of May the region was nearly flooded by the unusually heavy downpours. When one takes into consideration that, though

over 50 miles from the Gulf of Mexico, Houston's altitude is but 53 feet, and that the country is flat and the drainage bad, one can understand how unfavorable to the student of birds were the general weather conditions. For weeks after even the slightest shower water stands in the woodlands and on the prairies, making it almost impossible during the rainy season to leave the graded roads.

The Migration.—Houston lies in the "fly-line" of birds which skirt the western coast of the Gulf of Mexico, following the tropical and semitropical coast regions northward, and proceed up the Mississippi Valley and across the great plains. Furthermore, it catches many of the migrants which reach the United States by flying across the Gulf of Mexico.[2]

Generally during the last week of February migrating Blackbirds, Meadowlarks and Grackles are observed, but this year on account of the unsettled condition of the weather none were noted until the first of March. In fact, only one migrant was noted before March 1, the Purple Martin. It was first observed February 22, but retreated immediately and was not seen again until the return of real spring weather, about March 15.

Though the season was late in commencing, and the weather colder than usual, when it did start it came with a rush, for the greater part of the migrants arrived slightly earlier. The colder weather and excessive rains, especially in the early part of May, seemed to have the effect of detaining for a longer period the birds which summer north of the region under consideration.

Few water birds were noted, for I had not the time to make extensive trips into the wilder sections of the county.

The following list graphically illustrates the migration of 1914 at Houston, the species being arranged according to the order of their arrival from the south:[3]

[2] The only papers on the birds of the region are:
Nehrling, H. List of Birds Observed at Houston, Harris County, Texas, and Vicinity, and in the Counties Montgomery, Galveston and Fort Bend. Bull. Nutt. Orn. Club, Vol. VII, 1882, 3 parts.
Singley, J. A. Notes on the Birds of Galveston Island. Texas Birds, Report of Texas Geol. Survey, Austin, 1893, pp. 355-363.

[3] S. R. denotes summer resident.

Arrival.		*Departure.*
Feb. 22.	Purple Martin	S. R.
March 1.	Sprague's Pipit	March 28
March 14.	Mississippi Kite	S. R.
March 14.	Sycamore Warbler	S. R
March 15.	Blue-gray Gnatcatcher	S. R.
March 21.	Upland Plover	May 7
March 21.	Swallow-tailed Kite	S. R.
March 21.	Crested Flycatcher	S. R.
March 21.	Black and White Warbler	April 18
March 21.	Western Parula Warbler	May 7
March 21.	Northern Yellow-throat	May 12
March 21.	Wood Thrush	S. R.
March 23.	Scissor-tailed Flycatcher	S. R.
March 24.	Chimney Swift	S. R.
March 26.	Bank Swallow	May 10
March 26.	Rough-winged Swallow	May 7
March 28.	Ruby-throated Hummingbird	S. R.
March 28.	Kingbird	S. R.
March 28.	Yellow-throated Vireo	S. R.
March 28.	White-eyed Vireo	S. R.
March 28.	Cerulean Warbler	April 21
March 28.	Black-throated Green Warbler	May 16
March 28.	Hooded Warbler	May 9
March 28.	Redstart	May 9
March 29.	Florida Red-wing	S. R.
March 29.	Red-eyed Vireo	S. R.
March 30.	Cliff Swallow	May 2
April 4.	Least Bittern	S. R.
April 4.	Swainson's Hawk	April 4
April 4.	Whippoorwill	April 11
April 4.	Summer Tanager	S. R.
April 4.	Prothonotary Warbler	S. R.
April 4.	Orange-crowned Warbler	May 3
April 4.	Yellow-breasted Chat	S. R.
April 5.	Baltimore Oriole	April 11
April 11.	Green Heron	S. R.
April 11.	Solitary Sandpiper	May 16
April 11.	Wood Pewee	S. R.
April 11.	Orchard Oriole	S. R.
April 11.	Painted Bunting	S. R.
April 11.	Scarlet Tanager	May 2
April 11.	Blue-winged Warbler	April 11
April 11.	Nashville Warbler	May 9
April 11.	Kentucky Warbler	May 10

Arrival.			*Departure.*
April	12.	Chuck-will's-widow	S. R.
April	12.	Blue Grosbeak	S. R.
April	12.	Magnolia Warbler	May 16
April	13.	Barn Swallow	S. R.
April	15.	Worm-eating Warbler	April 15
April	18.	Yellow-billed Cuckoo	S. R.
April	18.	Least Flycatcher	May 10
April	18.	Indigo Bunting	May 16
April	18.	Yellow Warbler	May 23
April	18.	Grinnell's Water Thrush	May 9
April	18.	Catbird	May 10
April	18.	Olive-backed Thrush	May 9
April	19.	Florida Nighthawk	S. R.
April	19.	Green-crested Flycatcher	S. R.
April	19.	Dickcissel	S. R.
April	19.	Ovenbird	April 19
April	21.	Virginia Rail	May 2
April	21.	Sora Rail	May 9
April	21.	Black Rail	April 21
April	21.	Blackburnian Warbler	May 2
April	21.	Wilson's Warbler	May 2
April	21.	Willow Thrush	May 9
April	26.	Bobolink	May 2
April	26.	Rose-breasted Grosbeak	April 26
April	26.	Chestnut-sided Warbler	April 26
May	2.	Maryland Yellow-throat	S. R.
May	2.	Canada Warbler	May 9
May	2.	Bay-breasted Warbler	May 2
May	9.	White-rumped Sandpiper	May 10

The following list gives the winter resident species and the dates on which they were last seen:

Short-eared Owl	March 28
Fox Sparrow	March 28
Bewick's Wren	March 28
Short-billed Marsh Wren	March 28
Brown Creeper	March 28
Sparrow Hawk	March 29
Tree Swallow	March 29
White-rumped Shrike	March 30
Sapsucker	April 4
Phoebe	April 4
Red-winged Blackbird	April 4

Golden-crowned Kinglet	April 4
Marsh Hawk	April 11
Slate-colored Junco	April 11
White-breasted Nuthatch	April 11
Hermit Thrush	April 11
Northern Flicker	April 26
White-crowned Sparrow	April 26
Pipit	April 26
Brown Thrasher	April 26
Robin	April 26
Ruby-crowned Kinglet	May 2
Brewer's Blackbird	May 3
White-throated Sparrow	May 3
Towhee	May 3
Lark Bunting	May 3
Myrtle Warbler	May 3
Western House Wren	May 3

REMARKS ON CERTAIN SPECIES OBSERVED.

In the foregoing condensed migration report there are a few species that need explanation. In addition to these, there were species which could not be classified. For that reason this section is added.

Several species subspecifically doubtful have not yet been positively determined. *Hylocichla fuscescens salicicola* might be *H. f. fuscescens* (Veery). It is not certain that *Sitta carolinensis carolinensis* is the form of White-breasted Nuthatch that winters in southeastern Texas, but it is presumedly so. *Geothlypis trichas trichas* occurs as a summer resident, and *G. t. brachidactyla* as a migrant; I watched carefully the summer resident haunts of the bird and noted the day it was first observed there, giving that date as the arrival of *G. t. trichas* and considering all other birds as migrants and belonging to *G. t. brachidactyla*.

1. *Larus franklini.* Franklin's Gull.—April 18 a scattered flock of these Gulls was noted flying high overhead about a half mile west of the city. Eighteen were in sight at one time, some moving northward with slow, easy wing strokes, while others were floating, circling and shifting back and forth. During the course of that day I observed no less than eighty. On the 19th a few more were noted as they passed over the city. None were again seen until May 6, on which

day a flock of some thirty birds passed over the city. A third and last flight was witnessed on May 16, composed of perhaps seventy of these graceful birds.

2. *Branta canadensis hutchinsii.* Hutchin's Goose.—While walking along a shell road just west of the city on April 18, I was extremely surprised to observe a Goose of this species fly up from the prairie about two hundred feet from the road and go flapping off to the south, at no time rising over fifteen feet above the ground. It was probably due to my careless method of observation that I had not observed the bird before it took wing, for the only shelter in the prairie pasture from whence it flew was the scattered growth of "sage-brush" hardly a foot tall.

Both *B. c. canadensis* and *B. c. hutchinsii* occur as migrants and are not uncommon in winter. Small flocks of from ten to thirty birds passed over the city on various dates in March and early April (March 3, 9, 11, 27; April 4).

3. *Grus mexicana.* Sandhill Crane.—On March 10 a flock of about thirty, and on March 18 a flock of eighteen, were noted as they passed northward over the western edge of the city. On April 11 I witnessed a truly astonishing flight. I was observing a number of small Warblers in a patch of tall oaks on the edge of the Buffalo Bayou woods about a mile west of the city limits, when my attention was attracted by strange noises which I could not for the moment locate. And then I discovered the source, a flock of about seventy Sandhill Cranes flying northward about a hundred yards overhead; following this flock at a distance of about three hundred yards came a second and larger flock, numbering perhaps two hundred birds. Yet a third flock followed at some distance, numbering approximately one hundred and twenty birds.

4. *Creciscus jamaicensis.* Black Rail.—On April 21, while beating around in the sedge and tall grass of a tiny marsh about eight miles south of Houston, looking for nests of the Louisiana Clapper Rail, I nearly stepped on a small Rail which I at first took to be an early downy bird of the Clapper variety. However, I soon recognized my mistake and saw that the bird was the rare Black Rail; it ran just ahead of me through the reeds and rushes for quite a distance, easily evading my attempts to lay hands on it, until the edge of the marsh was reached, there taking wing and flying about a hundred yards before dropping into the next marsh.

The only other record for this region is that of Dr. Henry Nehrling, who states that one was taken April 29, 1879.

5. *Gallinago delicata.* Wilson's Snipe.—Common winter resident on the wet prairies and rice fields of the county; they began to move northward about March 1, and were not at all uncommon in suitable localities near the city from then until May 2, when the last two birds were observed. They were most abundant and more distinctly migrating on

April 18, when numbers were observed feeding along a shallow ditch just west of Houston.

6. *Pisobia maculata.* Pectoral Sandpiper.—Quite a rare migrant on the wet prairies and rice fields, but scarce near the city. Between March 7 and May 2, a few were noted feeding along the shallow ditch mentioned above, and a few in small flocks on the wet prairies.

7. *Piscobia fuscicollis.* White-rumped Sandpiper.—May 9 a small flock was noted on a small stretch of prairie just northeast of the city, and the following day (May 10) on visiting the prairie west of the city I observed numerous small flocks. That locality was well within the city limits and but a short distance from the edge of the residence district. Flock after flock passed and repassed me, their white rumps standing out plainly as they wheeled this way and that.

8. *Pisobia minutilla.* Least Sandpiper.—Three were observed April 18, in company with a few Solitary Sandpipers along the small ditch previously mentioned.

9. *Elanoides forficatus.* Swallow-tailed Kite; and

10. *Ictinia misisippiensis.* Mississippi Kite.—These two Kites, though listed as summer residents, should more properly be stated to occur irregularly during summer, for they are both very rare. Whenever noted, the birds were seen singly and sailing rapidly overhead on motionless wings.

11. *Buteo platypterus.* Broad-winged Hawk.—From the few records I have, I can hardly state just how the bird occurs. Generally they are only noted during the spring migration, and then only rarely. This year (1914) one was noted on the edge of the Buffalo Bayou woods west of the city on March 21, and another in about the same locality April 18.

12. *Asio wilsonianus.* Long-eared Owl.—This year I had the pleasure of examining an odoriferous specimen of this bird shot March 19 in the deep woods on Buffalo Bayou a few miles west of the city, and called to my attention two days later by the negro who caused the avicide, though not until the body had been shorn of its wings and consigned to the scrap heap. This is my second record for the region.

13. *Chordeiles virginianus chapmani.* Florida Nighthawk.—The migration of Nighthawks during my five years in the vicinity of Houston has been of particular interest to me because of the regularity of first arrivals. My belief that they arrive each year on the 19th of April has thus far held true, on that day a single bird being seen as it flew high over the city. For the first few days they were only noted by ones and twos. And then on the 24th came a closely packed flock, numbering about thirty birds, which flew low over the city and disappeared to the north. A few days later another such flock was observed. By the last of May the last straggling migrants had passed, leaving only our summer resident birds.

14. *Chaetura pelagica.* Chimney Swift.—My dates for the first

arrivals of Chimney Swifts at Houston for the past four years range from March 26 to 30, averaging March 29. This year (1914) two birds were observed on March 24. The next were noted on the 26th, but the birds did not become common until the 28th; after that they were seen each day, being common summer residents about the city.

15. *Archilochus colubris.* Ruby-throated Hummingbird.—Prof. H. P. Attwater first observed the Hummers in his garden in the city on March 28, but it was not until the 30th that I noted my first. By April 4 they were fairly common and remained so until about May 2, when the migration apparently ceased, leaving a very few birds as rare and irregular summer residents.

16. *Dolichonyx oryzivorus.* Bobolink.—Houston does not fall within the "fly-line" of the Bobolink, but a few are generally noted during each migration. This year two males were noted on the edge of the Buffalo Bayou woods about a mile west of the city on April 26. On May 2, four males and two females were observed on the south side of the city.

17. *Molothrus ater ater.* Cowbird.—During the winter months small flocks are not uncommon on the prairies near the city. About March 30 the last wintering flocks were observed, leaving only the summer resident birds. Whether these summer birds are *M. a. ater* or *M. a. obscurus* (Dwarf Cowbird) has not yet been determined, though I feel sure they are the latter.

18. *Xanthocephalus xanthocephalus.* Yellow-headed Blackbird.—Evidently quite rare in late years, for my only record for the past winter and spring is April 5, when three of these birds were noted in a small marshy spot near Webster, a station some 20 miles from Houston in the southeastern part of the county.

19. *Sturnella magna argutula.* Southern Meadowlark.—In several localities about the city Meadowlarks are not uncommon all winter, and though I have not determined by collecting the birds, I am convinced that they are *S. m. magna, S. m. argutula* and *S. neglecta,* the former probably predominating.

March 1 the first migrating Meadowlarks were noted; during the whole of March flocks of considerable numbers were continually passing northward. By the end of that month the migration dwindled and the last straggling migratory flock was observed on April 4, after which date only the summer resident birds remained. Migrants and summer residents are *S. m. argutula.*

20. *Euphagus carolinus.* Rusty Blackbird.—This migrant Blackbird seems to become more common year by year. First arrivals (1914) noted March 1, after which date they were the most abundant of all the birds. Throughout the month they were migrating northward, and the last were observed April 5. During this period they were abundant in flocks on all prairie lands, especially to the west of the city, where I often

observed large droves following plows in company with the Brewer's Blackbird and two Grackles.

21. *Quiscalus quiscula aeneus.* Bronzed Grackle.—Quite rare in winter, arriving in large numbers with the preceding species on March 1. Throughout March and early April they were migrating through, after which period only the summer residents remained.

22. *Astragalinus tristis tristis.* Goldfinch.—Fairly common migrant and not uncommon in winter; migration apparently commenced about March 15 and ended April 25, when the last birds were noted. During this migration period the birds were not uncommon in and about the shade trees of the city.

23. *Spinus pinus.* Pine Siskin.—Quite a scarce and irregular winter visitor in this locality. None were noted from December, 1913, to March 28, 1914; on that date a flock of twenty was observed in a small patch of woods on the western edge of the city. Later during the day three more were noted. May 9 a few were observed in the woods on Buffalo Bayou about seven miles east of the city, and on May 23 a flock of six was noted.

24. *Pooecetes gramineus gramineus.* Vesper Sparrow.—Abundant migrant and scarce winter resident. Migration commenced March 1, and during the whole of March the birds were abundant in small flocks on the prairies and near the woods on Buffalo Bayou. Last observed April 4.

25. *Passerculus sandwichensis savanna.* Savannah Sparrow.—I was under the impression that both this form and *P. s. alaudinus* occurred in this locality, but a number of skins were sent Mr. Oberholser, and he kindly identified them for me as *P. s. savanna.*

Common migrant. The first were observed April 4, were common during April and were last observed May 2. They were observed in the newly planted shade trees of a prairie suburb on the western edge of the city, and were later (after April 4) observed on the open prairies in flocks of some numbers.

26. *Ammodramus savannarum bimaculatus.* Western Grasshopper Sparrow.—On March 14 Prof. Huxley and myself observed for some time a small Sparrow which we could not at the time identify, but which was later found to be this bird. But it was not until May 17 that I really became acquainted with the birds; that day Mr. I. R. Tannehill, an Ohio ornithologist, kindly accompanied me afield for the particular purpose of ascertaining whether or not the birds occurred near Houston. I felt sure they occurred, but that on account of their inconspicuousness I had overlooked them. Show them to me he did, and it did not take me long to find them common on all weedy prairies near the city, particularly those to the west, where they are summer residents.

27. *Chondestes grammacus strigatus.* Western Lark Sparrow.—Common summer resident; a few winter and in migrations a few are noted in

flocks of Pipits and Vesper Sparrows, feeding among the broom weeds on old plowed fields near the edges of timber. Summer residents arrived March 21, and were apparently settled down and ready for nesting March 28.

28. *Spizella passerina passerina.* Chipping Sparrow.—Scarce winter resident in the vicinity of Houston, and generally observed in clearings and along the edges of timber. Large flocks migrating northward during February and March. Quite rare in April. Last noted May 10.

29. *Spizella pusilla pusilla.* Field Sparrow.—Not uncommon winter resident; small flocks migrating northward during March. Last observed April 18.

30. *Melospiza melodia melodia.* Song Sparrow.—A few winter in thickets near the city, but they are very shy and difficult to observe. Generally during migrations we see large flocks as early as February 1; but this year, on account of the unusual cold of February, none were observed until March 1. During March scattered flocks were migrating, the birds being particularly common from the 8th to the 14th. A few noted on April 11, and the last, a flock of eight, on April 21. During migrations these birds leave their usual haunts and are soon in flocks on the prairies near edges of timber.

31. *Zamelodia ludoviciana.* Rose-breasted Grosbeak.—Two males on April 26 form my only record for this locality. They were in a small pear orchard of a farm several miles west of the city, and on being closely approached took refuge in a nearby thicket.

32. *Hirundo erythrogastra.* Barn Swallow.—This Swallow is listed in the condensed migration report as a summer resident, for the reason that nearly every summer a few are noted. This year they were common and migrating during the latter part of April and early May, but none were seen after May 30.

33. *Stelgidopteryx serripennis.* Rough-winged Swallow.—The last of these Swallows were noted May 7. Though I have heretofore recorded but few during the summer months, I am told by several competent observers that they occur quite regularly and breed in sand banks of Buffalo Bayou and Galveston Bay.

34. *Bombycilla cedrorum.* Cedar Waxwing.—None were observed during the winter and I had feared they were victims of pot hunters, when on March 1 I was surprised to note a flock of about fifty of these birds in the woods on Buffalo Bayou west of Houston. On March 8 Prof. J. S. Huxley and myself observed a flock of thirty-five on Bray's Bayou.

On the 15th of March Mr. W. W. Westgate and myself observed numerous small companies in the cut-over timber lands on White Oak Bayou, north of the city. Generally the birds were to be observed sitting quietly in the topmost branches, their short tails, folded wings and crests giving them a rather conical appearance. Then one would fly and the

rest would straggle after, reminding us of a flock of Bluebirds. Their thin, beady, pulsating notes (*pee-ee-ee-ee-ee*, reminding one of the screeching of a bearing that needs a visit of the oil-can) were almost continually heard while we were in that locality.

During the last of March a few more were observed, and a few during April, but rarely. Last observed May 9.

35. *Nannus hiemalis hiemalis.* Winter Wren.—On March 28, while wandering through the woodlands on Buffalo Bayou about a mile west of the city, I observed a single bird of this species in a tangled brush heap in a mixed portion of the woods where there was much underbrush. Though I watched it for some time, the bird was not heard to utter a sound.

On visiting the locality April 4 I again observed the bird, or another of the same species, and remained for some time to observe it. Finally it left the brush heap and crept out on an old pine log nearby, and, much to my surprise, sang a very pretty little song, reminding me of the song of the Ruby-crowned Kinglet, though not of such a warbling nature, containing more trills and tinkling notes.

36. *Polioptila caerulea caerulea.* Blue-gray Gnatcatcher.—To me the 1914 migration of Gnatcatchers was little short of wonderful. Heretofore they have been quite scarce, even during migrations, and were always observed in the tallest forest trees. This season they were especially abundant.

On March 15, while in the cut-over timber on White Oak Bayou, northwest of the city, Mr. Westgate and myself observed the first Gnatcatcher of the season. We were watching a number of Myrtle Warblers feeding, when near at hand we heard a familiar twanging note, very thin and purring, sounding like the *sping* of a .22 rifle. We soon located the bird, a male, in the branches of an oak near at hand.

That afternoon five males and two females were observed.

On March 21 I walked westward from the city along the edge of the timber which borders Buffalo Bayou on the south. Gnatcatchers were everywhere, attracting attention by their peculiar call note. Anywhere and everywhere I observed them: in the deepest parts of the woods, on the lower branches of trees, on the edges of clearings and woods, and even on the ground. Numbers were observed on the barbed wires of the fences along the country road. They were not at all shy, frequently allowing me to approach within two or three feet of them. On one occasion in a small clearing in the timber I was watching a Downy Woodpecker tapping on a dead bough in a pile of brushwood on the ground, when a pair of Gnatcatchers lit on the brush, hopped actively about and lit on the ground. As they moved along on *terra firma* they looked for the world like a pair of miniature Mockingbirds, their long tails and general color strengthening that impression.

In the distance of less than two miles along the old road I observed

one hundred and ten of the birds, always singly or in pairs. They were never seen away from timber.

A few more were noted during the latter part of the month, but by the end of March the migration had apparently ceased, leaving only a few, a very few birds as summer residents.

37. *Planesticus migratorius migratorius.* Robin.—A few winter with us, but they are becoming scarcer year by year (*via* pots). Frequent the woodlands along the bayous, where they are very shy. On March 1 a flock of some seventy-five was observed just west of the city, by far the largest flock I have noted in years. Then a few on the 21st and 28th of March and the 4th of April; and on April 26th the last, two lone birds, were observed.

THE PINE SISKIN BREEDING IN IOWA.

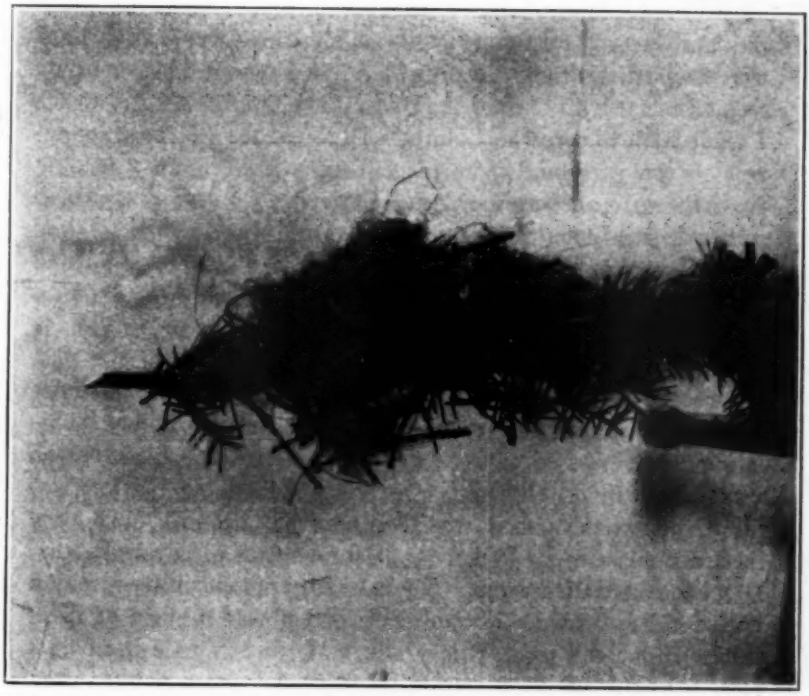
BY W. J. HAYWARD AND T. C. STEPHENS.*

I.

The joy of seeing and identifying a new bird is exciting and satisfying, but to find a pair of migratory birds building a nest in a tree in your front yard, when to the best of your knowledge the rest of the species were busy with this operation in the pine forests 500 or 1,000 miles to the north of us, is more exciting and more interesting. When my young neighbor, Ralph Whitmer, called my attention to a nest Monday, April 13, 1914, in a pine tree 15 feet from his father's front porch, I knew something unusual had happened in bird land.

In late February and early March a new bird song more musical than the Blue Bird's contralto carol and more inspiring than the Robin's "cheerily, cheerily," had come to me on the frosty morning air. It was a new song to me, as it not only had in it the freshness of the first south wind of spring, but the tenderness and sympathy of the summer bird songs as well. A half hour of quiet study with field glass and bird guide convinced me that my first harbinger of spring was the Pine Siskin (*Spinus pinus*). A flock of twenty-five or

* Part I by Mr. Hayward, Part II by Mr. Stephens.



NEST OF PINE SISKIN, SIOUX CITY, IOWA

thirty of these small migrants greeted me for a week or ten days each morning as I stood waiting for my car. They were between 4½ and 5 inches in length. The bird might easily be mistaken for the Goldfinch dressed in his winter suit, as its flight is very much like the Goldfinch. But the difference in the song makes the identification comparatively easy. When my young friend visited me the evening of April 13 and told me of the nest, I asked him what the birds looked like and he said "summer canaries." In answer to my question regarding their feeding habits, he replied that they seemed to eat "pine cones." Having my interest thus aroused, I went with him to the Colorado Blue spruce (*Picea pugens*) tree in the yard and near the end of a limb about nine feet from the ground was the nest. Getting a box upon which to stand, I could look over into the nest and see the bird. I had no difficulty in satisfying myself that it was the same bird that had so gloriously entertained me two or three weeks previously. I approached the nest with my hand, pulling aside the branches, and my hand was within six inches of the nest before the young housekeeper hopped to a branch no more than three inches the other side of her artistic home. This lack of fear seemed to be a characteristic of the bird, as she would remain on the nest when approached, no matter how often, but, when flushed, would return very promptly after the intruder withdrew. When the nest was first discovered April 13 it contained three eggs. These were greenish white, speckled with reddish brown. My young friend placed a basin of fresh water under the tree, which both male and female used as a bath tub and drinking fountain. But they were not tempted by the tray of bread crumbs that was invitingly placed by the basin of water, seemingly satisfied with the bill of fare furnished by the seeds of old and young pine cones on the tree. Only one of the eggs hatched, but this one bird was tenderly reared and was seen no more after May 5. Presumably it left with its fond parents for the far North on that date and is now being shown off to admiring relatives as an example as to just what the delightful spring air of Northwest Iowa can do for young Pine Siskins.

Just a word about the construction of this unusual nest. It was of the modern bungalow type. The foundation was rather loosely saddled on a pine bough about 15 inches from its tip, and consisted of dead pine twigs and pieces of dead weeds, grass, pieces of cord and roots were woven in to bind the foundation more securely. Placed rather loosely upon this was the real living apartment. This was made of finer roots, horse hair, and cotton. It was round like the nest of the Goldfinch, but only one-half as deep. The peculiarity of this nest was the lack of connection between the upper part of the nest and the lower.

On account of the rainy weather and the overhanging branches of the tree, it was impossible to see what kind of food was fed the young. This we regret very much. We both are hoping, however, that this pair of Siskins found Iowa such a hospitable state that they will want to build and breed here next year, and then we will endeavor to see just what kind of baby food they recommend.

II.

No Pine Siskins had been observed all winter (1913-14), by the present writer, until March 2, when four were seen up the Big Sioux river, feeding on the seeds of the common sunflower (*Helianthus annuus* L).

They were next noted on March 16 on the college campus. On this date a good sized flock was observed in the pine trees. It was observed that on this date the pine cones were opening, thus making the seeds accessible; and upon these the Siskins were feeding. Where had they been all winter, and how did they manage to reach this spot on the very day the pine cones opened?

From this time on, until the third week in May, they could be seen daily in small flocks of from three or four to a dozen. On April 20 thirty-one were counted in one flock, and on the 23d this same flock had increased to more than fifty individuals. This large flock was seen almost daily for about two weeks; but after May 4 only scattered individuals were noted, the last record being May 21.

Mr. Hayward was kind enough to take me to see the Pine Siskin's nest on April 14, and at that time I verified his account of the behavior of the parent bird on the nest, as given above, as well as his identification of the species. It was not necessary to kill the bird to determine its identity.

After the brood had departed he very kindly turned the vacated nest over to me for examination. A fuller description of it may be desirable, since but few have had the privilege of personal examination of the nest of this species.

In the available literature I am able to find a specific account of the finding of only five nests (counting once the report of several nests by Simpson, noted below).

Anderson, in *The Birds of Iowa,* makes no suggestion that the species may breed in the state.

Kumlien & Hollister simply quote other observers who affirm a belief that it may breed in Wisconsin. Cory adds no information on this point.

Hatch leaves one to infer that he had definite knowledge of the breeding of this species in northern Minnesota, but he is vague on this point.

Barrows points to evidence that they were breeding in Michigan, but states that no nest has been found. Davie says they breed in Michigan.

Wheaton thinks they may breed in northern Ohio, but Dawson says this is still undetermined. Bruner, Wolcott, and Swenk think it may breed in the pine forest region of northwestern Nebraska.

Allen [1] refers to a nest having been found at Cambridge, Mass., in May, 1859, but I have not been able to locate the original account.

Fisher [2] records the finding of a Siskin's nest at Sing Sing, N. Y., on May 25, 1883, which contained four eggs. This nest was located in the top of the tree, twenty-four feet from the ground. It measured 8 cm. (outside) by 5 cm. (depth).

Allen [3] gives a rather full account of the finding of a breeding pair of Pine Siskins in Orange county, N. Y., in the spring

[1] Auk, IV, p. 286.
[2] Bull. Nutt. Orn. Club, VIII, p. 180.
[3] Auk, IV, p. 284.

of 1887. A nest which he found in process of construction on May 3 was later deserted. This one was only eight or ten feet from the ground. However, by May 12 another nest had been constructed, and contained four eggs. This nest was also in a Norway pine, but about thirty-five feet high. This writer also mentions the tameness of the sitting bird.

Ralph and Bagg [4] record the breeding of the Pine Siskin at Remsen, N. Y., April 4-9, 1889.

R. B. Simpson [5] records the finding of ten nests of this species in the hemlock forests and in the mountains of Warren county, Pennsylvania, during the spring of 1912. These nests varied in height from 10 to 30 feet from the ground. The first one was found on April 14; the others on through the month of April.

One other record, which, however, is over the Canadian line, is described by C. H. Morrell [6] as being found on March 29, 1898, in Nova Scotia. This author describes the nest somewhat fully, and also mentions the bird's lack of fear.

The nest referred to in Mr. Hayward's paper possessed the following dimensions, although, it should be noted, the measurements were taken after the nest had been abandoned and was in a more or less dilapidated condition. Outside diameter, 90 mm.; inside diameter, 45 mm.; outside depth, 50 mm.; inside depth, 10 mm.

As Mr. Hayward says, the upper part, or superstructure, was very loosely laid upon the foundation; this, probably, is not a general characteristic.

The foundation of the nest was rather loosely constructed of coarse pine twigs, which were interwoven with string and some silk thread. Numerous broken bits of roots and stems (including stems of the tumble weed, *Salsola kali* var. *tenuifolia*) were used. The superstructure was composed of bits of much finer roots and stems, intermingled with a great deal of some sort of wool and human hair. More might be said of this latter component, because of its rather unique occurrence. The amount of this material was considerable. Short

[4] Trans. Oneida Hist. Soc., XII, 1912, pp. 16-85.
[5] Oologist, XXIX, p. 372.
[6] Auk, XVI, 1899, p. 252.

strands (40-60 mm.) of rather coarse gray hair, and longer strands (150-200 mm.) of somewhat finer auburn hair, seemed to indicate two sources of material. There were a very few still coarser black hairs, which may have been horse hairs.

The presence of this material in the Pine Siskin's nest is of interest and significance. This bird is accustomed to nest in localities where such material is probably not available. We find here, then, an instance of its ability and readiness to adapt itself to new surroundings and conditions of environment.

This pair of birds was evidently overtaken with the breeding instinct before the bulk of the species had moved northward from this locality. Finding a suitable site in the spruce trees, no doubt accentuated the developing instinct. Construction was begun, and a foundation of the normal type was built from the pine twigs. Then in searching for the softer material in the immediate vicinity, which included a human habitation, they came across a supply of human hair, which they were able to recognize as suitable for their purpose.

There are, in this instance, two noteworthy facts. The establishment of a record of the breeding of the Pine Siskin in the state of Iowa; and the interesting modifiability of habit in response to external conditions.

Sioux City, Iowa.

THE WILSON BULLETIN

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Official Organ of the Wilson Ornithological Club.

Edited by LYNDS JONES.

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EDITORIAL

Remember the second annual meeting of the Wilson Ornithological Club, which will be held in Chicago, Illinois, on December 29 and 30, 1914. The first opportunity for a gathering of ornithologists in the central part of the United States was presented at the 1890 American Association for the Advancement of Science held at Indianapolis. The writer attended that meeting, where he met Mr. O. Widmann, Dr. B. W. Evermann, Dr. A. W. Butler, Dr. Morris Gibbs and others. The next opportunity was offered in February, 1914, at Chicago, when we met last spring. We ought to make this third opportunity count big by planning now to attend.

o

In anticipation of the Chicago meeting, plan to present a paper. Send the title to the chairman of the program committee, Lynds Jones, Oberlin, Ohio, not later than December 1, but as soon as you can. Plan to place these papers in the hands of the editor for publication in the Wilson Bulletin, to be published after the meeting.

There are large numbers of ornithologists throughout the central districts of the United States who are not now affiliated with any organization but who ought to be for their own sakes. Such persons would probably be glad to join our Club if its existence and aims were made known to them. Be a missionary and help all such known to you to find themselves among our number this year.

———o———

There are too few short field notes. As the Wilson Bulletin grows this lack ought to be supplied. It is an easy matter to write up a short account of some happening worth recording, as compared with preparing an article of some length. If written at the time of the happening, in first draft form or in permanent form, the thing is done. Try it.

———o———

We regret to have to say that on account of the Pan-European war Rev. W. F. Henninger's work on the Ne-aretic Ornis will be indefinitely postponed. The first part was about ready for mailing when the war began. Mr. Henninger has our sincere sympathy in this bitter disappointment.

———o———

TO MEMBERS OF THE WILSON ORNITHOLOGICAL CLUB:

The next meeting of the Club will be held in Chicago on Tuesday and Wednesday, December 29th and 30th. It is probably not possible to select a date suitable to every one, but we have done the best we could do, taking all things into account.

Now, we hope this will be a great meeting, and things even now point to a large attendance. Last spring we had a very good meeting, without very long notice in advance. This year the notice is ample, and we hope that every one will plan to attend who possibly can do so.

In the meantime cannot each member do a little toward strengthening our membership? It is our hope to greatly increase our membership before the next meeting. Will each member try to secure at least one or two new members, and send to the officers the names of others who may be solicited?

We need a larger membership in order to publish a larger Bulletin. Coöperation at this time will mean a great deal to the future of the Club.

Sincerely yours,

T. C. STEPHENS.

FIELD NOTES

AN EXPERIENCE WITH A FLORIDA GALLINULE.

On or about the twelfth of last May I heard of a strange bird that was in a certain grocery store window. Being naturally curious I thought I would stop in and see it. The grocer was not acquainted with the bird and was not able to find any more definite name for it than that it was a green legged snipe. I myself had never seen a gallinule but I knew at first glance that it belonged to the same family as the coot, which bird I was quite familiar with in some of his northern Iowa breeding grounds.

I got out my Chapmans and Reed's and easily placed him with his proper name. This incident occurred in Des Moines, Ia. The breeding ground of the gallinule is in Minnesota and the Dakotas. This particular species, the Florida gallinule, is never found in this territory except on its yearly migrations.

The bird was found tangled up in some barb wire fence about a mile from a river in a more or less populated portion of the city. My assumption is that the bird in flying strayed a little lower than its comrades and thus met its fate. It had the characteristic slate color of the family, the legs were a bright green with a reddish tinge on the upper part of the femur, the bill and nose plate were red, except for about one-half an inch of yellow on the tip of the bill. This latter point or characteristic was probably an anomaly. This is true of the Purple gallinule but not of the Florida. The serrated edging of white along the lower margin of the wings, together with the reddish upper femur, distinguished it as the Florida rather than the Purple, which it so closely resembles. I have found these differences and variations in the color of the mandibles of water birds to be quite common.

The fact that these birds fly at night, and being as they are by nature weak flyers, probably accounts for the strange situation in which he was found.

I paid the sum of fifty cents for the bird, took it to the zoology department at Drake University, where we caged it and kept it under observation while it recovered from its unusual experience.

At first he was very tame and made no fuss at being handled, but soon he became restless and it became a problem what to do with his Floridaship. The bird thrived on angle worms but ate cracked corn when there was nothing better.

When school closed the tenth of June, I carried him in a yeast foam box a distance of about two hundred miles north to the Iowa City Lakeside Laboratory at Lake Okoboji. Here I tethered him out on the shore by a string about twenty feet long. He seemed quite content with his

lot and spent his time feeding amongst the seaweed and drift on the water's edge. There were a number of Scaup ducks nesting in the vicinity who manifested considerable curiosity and decoyed to within a few yards of a number of us who were working on the shore. They seemed not to understand why their friend was so reckless. At night I often found them together.

And now I come to the end of my gallinule's experience. One night a strong wind came up from the northwest, the little box that had served as a shelter was blown away and the next morning I found him beating against the shore dead. I examined his wing and found one of the wing tips to have been injured in a way that would have left him unable to ever again fly for any distance.

I have since found this summer that the gallinule nests here in northern Iowa, and after watching the flight of the bird I figured that the accident to the bird was a very natural one. Their flight while rapid is very low, especially is this true when flying over water.

Milford, Ia. ARTHUR F. SMITH.

MINIATURE EARTHQUAKE.

A few days ago, while cutting the upper limbs off a large burr oak tree, we barely missed wrecking a whole family of wrens. On one of the lower branches was a small bird house, in which a pair of wrens were nesting. They seemed not to mind the noise of a couple of saws grinding away above them but went on, totally oblivious of noise, feeding the young and taking turns singing from the roof of their little domicile.

All went well until an accident occurred, as accidents so often do. The branch that we had figured on falling a certain way naturally fell the other way; the bird house was heaved from its bearings, spun through the air some twenty feet, coming to the ground with a thud.

I ran over to it, lifted the bottom off, pulled out the twigs which formed the nest, being careful not to spoil the pocket of the nest. There were six young, barely a week old; they were not active enough to tell whether they had been injured or not. The old bird who was with them acted as though she had taken her last flight and was ready to give up the fort. When she saw the crowd around her she essayed to fly, but her head was evidently still whirling in such a way that she could not balance. I placed her back on the nest, put the nest back in the house and put the house on a porch roof some thirty feet away at about the same height from the ground.

The mate to the injured one soon came back with a grub in its mouth, hopped all around the old nest site for some five minutes, then suddenly he recognized the house, which, by the way, he was within three feet of several times, for in his excited flying he would land on the edge of the porch where he had been accustomed without seeing anything, but sitting at the old nest site he recognized his old home and without further

adieu he flew across, went straight up to the house and walked in. A few minutes and the two old birds came out and calmly went for either food for the young or perhaps herbs to cure seasickness.

Several days have elapsed and the birds still continue to take regular trips with food. We are of the opinion that the wren family has not been wiped out through its fifteen-foot flight on the perpendicular.

Milford, Ia. ARTHUR F. SMITH.

BAY POINT, OHIO, MIGRATION NOTES. 1914.

Bay Point is a low, sandy bar, extending a mile and a half toward the city of Sandusky from the southeastern corner of the Peninsula upon which Lakeside and Marblehead are built. It is in the direct line of the southward migrations of the birds which cross lake Erie by the Point Pelee, Pelee Island, Middle Island, Kelleys Island, and Marblehead Peninsula route. The waters, or shores, of Sandusky Bay and the Sandusky River, which flows into the bay, continue the route southward.

The seven weeks between June 26 and August 14, 1914, were spent within easy access to this point, and daily studies of the birds found there were made. Frequent visits were also made to it during July, 1913.

In 1913 the first migration noted was on July 11th, when Least Sandpipers, Semipalmated Sandpipers, Yellowlegs and Semipalmated Plovers were found on the beach. On the 12th a cloud of Bank Swallows passed over the Point on their way southward. The great majority of them came directly from the direction of Marblehead Lighthouse and passed up the bay along the western shore. In 1914 the first migrants appeared on June 29—a Black-bellied Plover in full dress. When he was flushed, he flew up the bay. On July 3rd there were three Least Sandpipers on the beach. They were next noted on the 9th, and nearly every day until our departure—August 14. Three Semipalmated Plovers arrived on July 3, with three Baird's Sandpipers, and were regular feeders there during our stay, occasionally increased in numbers up to a dozen of each species. A Dowitcher came to the beach on July 14, in the afternoon, and was seen there on the 15th, 22d, 23d and 24th. The first Caspian Terns came on July 17, and were there every day afterward. There were three at first, but they gradually increased to the maximum of 16 on August 25, when a brief visit was made to the Point. The first Semipalmated Sandpipers came on July 16, the Yellowlegs on the 22d, the first Pectoral Sandpipers on the 24th, and the first Solitary on the 24th.

On July 17 a Stilt Sandpiper visited the Point. A capture was not made, but the bird was feeding in a shallow lagoon just outside the line of vegetation which bordered the bare sand beach, and permitted an approach within three rods. There was no mistaking the barred under-parts, the long slender legs, and the habits which I had carefully studied in Iowa in the summer of 1913. The bird was with Spotted Sandpipers and Piping Plovers.

It was clear that Bay Point is the favorite gathering place of the Caspian Terns, and that the few individuals which have hitherto been seen in the vicinity of Cedar Point and the east Sandusky marshes were birds that had wandered from here. Taken all in all, Bay Point is a far more favorable place to observe the southward migrations than Cedar Point.

LYNDS JONES.

THE GOLDEN WINGED WARBLER IN CENTRAL IOWA.

In Anderson's "Birds of Iowa" practically all of the records of this species are from the eastern part of the state. To these I would like to add two records for central Iowa. Both of these were made in Marshall County along the Iowa River. The first record was May 24, 1913, when an adult male was taken out of a dense hawthorne and wild crab thicket. I caught just a glimpse of him and then hunted for more than an hour before I finally succeeded in securing it.

The other record was on May 11, 12, and 13, 1914. The 11th and 12th were cloudy and cold following warm weather. One male Golden-wing was found about a small sheltered spring during these three days. He could be found almost any time during the day and was never more than a few yards away. It was presumably the same bird, as it was always found in company of two Chestnut-sided Warblers.

IRA N. GABRIELSON.

A WREN INCIDENT.

On Saturday, May 16, a couple of my friends went on an over Sunday camping trip up the Iowa River. They pitched their tent, and in disposing of their coats hung one of them on a small thorn apple tree. Sunday a wren appeared and seemed to be quite fascinated by the possibilities of that coat. My friends placed a few bread crumbs on the coat sleeve and the bird soon found them. A little later it commenced to investigate the pockets and scrambled about through all of them, including a large game pocket.

It finally decided on the pocket to be preferred as a nesting site and commenced to clean out. This pocket happened to contain cartridges for a 22-caliber rifle and the wren was seen to carry thirty-nine of them out of it. Some of them were simply pushed out over the edge of the pocket while others were carried some distance from the coat before being dropped into the grass. The bird worked industriously until every cartridge was out of the pocket and then, after scratching around vigorously, proceeded to carry sticks and straw into the pocket and built a nest.

Unfortunately operations had to be suspended at this point, as the coat was needed for the return trip to town.

IRA N. GABRIELSON.

REVIEWS OF PUBLICATIONS

THE BIRDS OF NORTH AND MIDDLE AMERICA.

PART VI. BY ROBERT RIDGWAY.

The sixth part of this monumental work comprises the Picariae with the families Picidae (152 forms), Capitonidae (4 forms), Ramphastidae (14 forms), Galbulidae (3 forms), Bucconidae (13 forms), the Anisodactylae with the families Alcedinidae (10 forms), Todidae (6 forms), Momotidae (20 forms), Caprimulgidae (39 forms), Nyctibiidae (5 forms) and the Striges with the families Tytonidae (9 forms) and Bubonidae (94 forms). Quite a number of new forms are here given for the first time and many critical remarks on already diagnosed forms are made. For instance in regard to the further subdivision of the genus Centurus among the Picidae. When it is stated that the forms of *Dryobates villosus* and *pubescens*, of *Colaptes auratus* of *Phlœotomus pileatus* show a gradual increase in size from Florida northward without any material change in coloration one is inclined to ask has the naming of all these forms a practical value besides the mere scientific value? A great deal depends of course upon the point of view in such cases, but when it comes to being a science for science's sake only, when the scientific and the practical are thus separated we are inclined to ask, "cui bono?" On the other hand, some of these problems must be solved along these lines, and no man is better able to solve them than Professor Ridgway, the distinguished author of this work. It is interesting, too, to notice the different views, which for instance Professor Ridgway and Dr. A. Reichenow, express in their respective works about such a family as the Striges. Space forbids us to enter upon any details, but a careful study of both authors will show that either view has some points in its favor, and that Dr. Reichenow's ideas cannot be disposed of with a few remarks, as was done in the review of his work in the Auk some time ago, which only showed and proved that the reviewer had not in the least understood the fundamental principle of Dr. Reichenow's classification, and in his ignorance of the case had simply squelched its merits. *Cryptoglaux acadicus scotaeus* is considered an individual variation of *acadicus* proper, and *Otus flammeolus idahoensis* is referred to *flammeolus*, and *Otus xantusi* is made a subspecies of *asio*, and we think in every case that Mr. Ridgway is correct. The same principle will perhaps apply to *Glaucidium gnoma hoskinsii*, which applies to *Cryptoglaux acadicus scotaeus*. Altogether Mr. Ridgway is to be congratulated upon the completion of this volume, and we hope that the other parts will speedily follow. W. F. H.

THE BIRDS OF VIRGINIA.

By HAROLD H. BAILEY.

This neat and attractive volume of 362 pages treats of the breeding birds of the great state of Virginia, practically all of which have been hunted up and critically recorded by the author and his father. One hundred and eight generally good halftones from various sources accompany the text, as also fourteen full page colored plates by Mr. Earl L. Poole, of Philadelphia. We have seen some of the original paintings of this young artist and do not hesitate to declare that they are both highly artistic and scientifically correct, and absolutely equal to the best which have been produced in this country, and we have seen the paintings of them all. The text is carefully written and shows that Mr. Bailey, who is an ardent Oölogist, has put his knowledge acquired in watching the nesting habits of the birds to good use, and is a splendid protector of the feathered tribe, as every true Oölogist should be. We regret that he has not added a short list of all the birds recorded in the state, and that he has not used the metric system in giving measurements of eggs. We can highly recommend this pleasing volume to all who love to read about and study the birds in their haunts. W. F. H.

A Monograph of the Genus Chordeiles Swainson, Type of a new Family of Goatsuckers. By Harry C. Oberholser. U. S. National Museum Bulletin 86. 1914.

The author seems to have made out a good case for the addition of a new family to North American birds. He has evidently gone into the subject deeply and spared no pains to prove his case. The same seems to hold for the erection of a new genus to separate the Whippoorwills from the Chuch-wills-widow group. The paper is thorough in treatment and is nearly the last word as related to the Goatsuckers. There are still a few forms whose winter distribution is not known. L. J.

A Distributional List of the Birds of Arizona. By Harry S. Swarth. Pacific Coast Avifauna No. 10. Published by the Cooper Ornithological Club, May 25, 1914.

There are here included 362 species and subspecies, grouped as 152 resident, 72 summer visitant, 57 winter visitant, 30 transient, 51 of casual occurrence, and a hypothetical list of 24. The large number of resident species is explained as due to the fact that many species which are truly migratory merely migrate from a higher to a lower altitude but do not leave the state. A colored map of the state is a great help. The paper closes with lists of species grouped according to faunal regions, and with a voluminous bibliography. This contribution is in every way the equal of other numbers of this valuable series of papers. L. J.

The Birds of El Paso County, Colorado. I and II. By Charles E. H. Aiken and Edward R. Warren. Colorado College Publications, General Series Nos. 74, 75, 76. May, June-September, 1914.

The life zones included in this county are Upper Sonoran, Transition, Canadian, Hudsonian, and Arctic-Alpine. Lists of the birds which are peculiar to these several zones are given. A history of the work done in the county is given, the climate is described, and the altitudes given. The birds are divided according to occurrence as resident throughout the year, 46 species; summer residents, 84 species; breeding birds which occasionally winter, 7 species; non-breeding birds which winter, 28 species; non-breeding birds which pass through in migration, 52 species; non-breeding birds of occasional occurrence, 51 species; exterminated species, 3; introduced species, 4, making a grand total of 275 species. There are many good halftone pictures from photographs, and in the treatment of the species in the body of the paper the annotations are interesting and valuable. This paper is a distinct contribution to local ornithology. L. J.

The Birds of Waukesha County, Wisconsin. By Alvin R. Cahn. Bulletin of the Wisconsin Natural History Society, Vol. XI (New Series), No. 4, December, 1913. Pages 113-149.

A good map of the county makes clear the great number of lakes which it contains, and the large amount of swampy area. It would have helped to have also indicated the tamarack areas. A description of the topography of the county and an account of the work done upon which the list is based, with acknowledgements, is followed by the annotated list of 202 species, 8 of which are given as hypothetical. There are 15 Residents, 7 Winter residents, 69 Summer residents, 79 Migrants, 11 Migrant and summer residents, 7 Migrants and winter residents, and 6 Rare visitants. These various groups are given in separate lists in a recapitulation at the close of the paper. The author has evidently taken pains to make certain of the identification of each species before giving it place. In this he is to be commended. There are four good halftone plates from photographs, each plate containing two pictures. Probably the author is not responsible for the capitalization of the part of the compound words which follows the hyphen. This is consistently done throughout the paper. We are glad to have this faunal local list.
L. J.

The Red-winged Blackbird: A Study in the Ecology of a Cat-tail Marsh. By Arthur A. Allen. From Abstracts of Proceedings, Linnaean Society of New York. Nos. 24-25, 1911-13. Pages 41-128.

We have seen few papers which can compare with this one in thoroughness of the work done, interpretation of the facts gathered, arrangement of the material, selection, and makeup. The numerous halftones from photographs are not only uniformly good, but they tell something

worth recording. It is not possible to begin to do justice to this paper in the space at our disposal. Everybody who is at all interested in the side of bird study illustrated by this paper ought to possess a copy. We hope that there are plenty of them to be had. L. J.

On the Habits and Behavior of the Herring Gull, Larus argentatus Pont. By R. M. Strong. From "The Auk," Vol. XXXI, January and April, 1914. Pp. 23-49, 178-199.

This paper is based on studies carried on among the breeding colonies of these gulls upon the islands in Green Bay, Wisconsin. The limits of this review preclude anything like an adequate treatment of this excellent paper. The field studies are supplemented by painstaking investigations in the laboratories of the University of Chicago. The pictures —halftones from photographs—are carefully chosen and each one has its peculiar contribution to make to the paper. There is little left to be desired in the field which this paper covers. If a similar study of the winter habits of these gulls could be as carefully done we should then know about all of the life history. L. J.

PUBLICATIONS RECEIVED.

A Further Study of the Home Life of the Brown Thrasher—Toxostoma rufum Linn. By Ira N. Gabrielson. From the Proceedings of the Iowa Academy of Science for 1913. Pp. 299-304.

A Heronry near Indianapolis. Pp. 57-58.

Further notes on Indiana Birds. Pp. 59-65.

Birds that Destroy Grapes. Pp. 53-55.

All by Amos W. Butler. From Proc. U. S. Nat. Mus., Vol. 43.

Use and Value of Wild Birds to Texas Farmers and Stockmen and Fruit and Truck Growers. Compiled by H. P. Attwater. 1914. Texas Department of Agriculture Bulletin. May-June, 1914. No. 37.

Birds in Relation to the Alfalfa Weevil. By E. R. Kalmbach, Assistant Biologist. Bulletin of the U. S. Dept. of Agri. No. 107.

The Ontogeny of the White Ibis; Specialization of Tail Down in Ducks; Effect of Postponed Moult in Certain Passerine Birds; Preliminary Pheaant Studies. By C. William Beebe, Curator of Birds. Zoological Scientific Contributions of the New York Zoological Society, Vol. 1, Nos. 12-15.

The Extermination of America's Bird Fauna. By R. W. Shufeldt. Separataftryk Af, "Nyt Magazin for Naturvidenskaberne." Christiania. 1914.

Osteology of the Passenger Pigeon (Ectopistes migratorius). By R. W. Shufeldt. From "The Auk," Vol. XXXI, No. 3, July, 1914. Pp. 358-362.

Notes on the Louisiana Clapper Rail (Rallus crepitans saturatus) in Texas. By George Finlay Simmons. From "The Auk," Vol. XXXI, No. 3, July, 1914. Pp. 363-384.

ORNITHOLOGICAL JOURNALS RECEIVED.

The Auk, Vol. XXXI, April and July, 1914.
Bird-Lore, Vol. XVI, Nos. 2, 3, 4. 1914.
Bluebird, Vol. VI, Nos. 10 and 11. 1914.
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The Oregon Sportsman, Vol. II, Nos. 4, 5, 6, 7. 1914.
The Oriole, Vol. II, Nos. 1, 2. 1914.
The Taxidermist, Vol. 2, No. U. 1914.
Our Feathered Friends, Vol. I, No. 4. 1914.

CORRESPONDENCE

A REJOINDER.

By T. C. Stephens.

There appears in a recent number of the Auk* a criticism by W. L. M. of some work which has appeared from time to time by students of the Macbride (Iowa) Lakeside Laboratory. Inasmuch as the present writer is largely responsible for this work, and inasmuch as similar work may appear in the future, it becomes a duty to ascertain to what extent the criticisms are grounded.

The criticism is directed wholly at such parts of the work as relate to the food of nestling birds, a field which seems to be guarded zealously by the critic as the peculiar domain of the Biological Survey.

Let us examine specifically some of the objections raised. He charges the workers with "over-enthusiasm" (a statement rather too vague to detain us), and goes on to say that it is a grievous fault "to publish identifications that could not possibly have been made under the circumstances."

Truly, this is a bold and sweeping accusation. Upon what does our rash reviewer base his confidence? W. L. M. further says, "Now the positive identification of a mosquito, and the distinguishing of the house and stable flies, two obscurely marked species of the same family, require far closer and more definite observation than could possibly be made on specimens in process of being fed to nestling birds."

This criticism is directed at Gabrielson's work on the catbird (Wils. Bull., XXV, Dec., 1913, pp. 179-180), where, in Table III, 99 "Flies" were recorded as being fed to the young over a period of ten days; and in which the text says "The flies were mostly fish flies, though house and stable flies were also noted."

* The Auk, XXXI, July, 1914, pp. 420-421. "W. L. M." presumably stands for W. L. McAtee, of the Biological Survey, but inasmuch as his name does not appear on the editorial staff, and not having been introduced by the Editor of The Auk, the writer regrets to be compelled to refer, in the present note, simply to the initials as signed.

Now the nest of the catbirds was in a bush located on a steep hillside. The blind being higher, enabled the observer to see over and around the bushes. Flies swarmed about on the foliage of these bushes, and the observer in the blind could see the catbird capture them and feed them to the young birds in the nest. A number of these flies were caught and submitted to an entomologist from Ames College, who was teaching that subject at the laboratory, and who named the flies as above. The paper did not state that every fly fed to the young birds was recognized as to kind. In the tables II and III they are simply listed as "Flies." The enumeration in the text may have been based upon specific data, or it may have been a general estimate based upon memory, and still be an accurate statement.

The original statement is perfectly safe, and scientifically accurate, notwithstanding the obstinate misinterpretation by the critic.

Now, in regard to the mosquitoes, which are also denied by W. L. M. in the statement above quoted. The one mosquito recorded in the catbird paper (page 179) was observed under the following circumstances, as communicated to me by the author of that paper: "The old bird was on the nest, and I was in the blind. As it was only 8:00 a. m., a few mosquitoes were still about. One in the blind buzzed around my face, and I struck at it with my hand. It flew out of the peep-hole, and as I idly followed its flight it lighted on a leaf within six or eight inches of the nest. The old bird immediately snapped it up and fed it to one of the nestlings."

With reference to the mosquito records in the Yellow Warbler study (Wils. Bull., XXV, June, 1913, p. 55), I can only call the reader's attention to the fact that as the observer sat in the blind, the nest was almost as close to his eyes as is a newspaper while being read—not over two feet away. The bill of a Yellow Warbler is only 3.5 mm. wide at its base, while the terminal third of it is not over a single millimeter in width. Thus even the body of a mosquito could scarcely be entirely concealed in the bill of such a bird. I am well aware that it is almost a waste of time to be discussing the question whether a mosquito was actually seen or not; but I would simply remark that when the possibility of it is so evident, it would seem that the critic is rather forcing an issue. When we admit the possibility of seeing one mosquito, the repetition of it, even to sixty-five times, should give us no greater concern.

Our captious reviewer displays a lack of knowledge of this kind of field work, and its methods, when he questions an observer's ability to count 5, 6, or 7 Mayflies in the beak of a Brown Thrasher at the nest. May I be permitted to call attention to a few elementary facts?

The date on which these seemingly large numbers of Mayflies were recorded was June 28, at which time the Mayfly swarms were at their maximum. In the evening dense clouds of them filled the air, and during the day the grass was full of them. Frequently the old birds fed in the

grass in close proximity to the nest, where they were under observation. In a few instances the Mayflies were counted as they were being gathered. On this date 244, counted, Mayflies were fed to the young.

Usually the old bird pauses an instant at the nest before feeding, during which time there is an excellent opportunity for counting. In fact, Mr. Gabrielson tells me that this summer, while watching a Rose-breasted Grosbeak's nest, he was able, by making a slight noise, to hold the male on the edge of the nest for three minutes, by the watch, while trying to determine the contents of its beak. I wish I might assure the critic that it is not surprising for the bird to have so many Mayflies in its beak; neither is it, under the circumstances, particularly difficult to count that number of them.

The ants may be discussed in a similar way. I think no more than three ants were recorded at any single visit. In all of these records, it is understood, I had supposed as a matter of course, that the number recorded were seen and counted; but it was not claimed, nor was it intended to convey the impression, that no more were in the bird's bill. For instance, if the old bird visits the nest with a beak full of ants, and the observer could distinguish the bodies of three individuals, it would be ridiculous to assume that no more than three were in the bird's mouth. This is so elementary!

It will be found that in Gabrielson's report on the Brown Thrasher study, in Table I, the plus sign was frequently used to indicate that a certain number of individual insects were recognized out of a larger number. In this report (Wils. Bull., XXIV, June, 1912, p. 84) there will be found the following statement: "It will be noticed in the tabulated data that the number of insects was not always determined exactly, but was entered in this manner, '6+ Mayflies,' etc. In all such cases the minimum number was used in computing the tables. As all of the persons who assisted were cautioned especially to note the number of insects exactly, it is safe to assume that if there be any error in the data it is in having recorded too few insects, rather than too many."

The reviewer then believes he has given sufficient illustrations of the inaccuracy of the work to demolish it completely, and proceeds with this *ex cathedra* pronouncement: "It should be recognized that reporting on the food of nestling birds on the basis of field observation is work for accomplished entomologists, not for amateur ornithologists," with emphasis, perhaps, on the "amateur." Of course, no one will dispute this statement, although the work is more likely to be done by an ornithologist who knows some entomology, than by an "accomplished entomologist." The only fault with such a remark is the animus revealed by it, which does not beget confidence or friendliness. The reviewer is expected to give more conclusive proof of inaccuracy before indulging in such caustic comment.

The very excellent pioneer report on the nest study of the Chipping

Sparrow by Dr. C. M. Weed* is cited as a model, because of the indefiniteness of identification of the food fed to the young sparrows. This nest of the chippy was "near" a window, from which it was watched; but nothing further was stated to enable one to know whether the distance was two feet or ten feet, or whether it was watched through an open or closed window. It is only fair to the authors of this paper to quote from page 109 as follows: "The precise determination of the most of the food brought was, of course, impossible, the observations having been undertaken especially to learn the regularity of the feeding habits of the adult birds." Since this study was not undertaken for the purpose of determining the nature of the food, it hardly seems proper, in fairness to the author, to set it up as an example of this line of work.

The reviewer's proposal to tie bags over the anal orifices of nestling birds for the purpose of collecting the excreta will be highly amusing to anyone who has noticed young birds in the nest. However, any suggestion coming from so well qualified a critic deserves attention, and the writer will endeavor to try out this new method at some future time.

As another suggestion that the authors of the several papers reviewed may have been deceived in their observations the reviewer has said, "A great many birds feed by regurgitation and the food is at no time visible." We take it that the reviewer here has in mind passerine birds, since no other order was involved in the discussion.

In our studies on the passerine birds we have succeeded in following the feeding of at least one out of a brood, from the moment it left the egg until it left the nest, in the cases of the yellow warbler, the catbird, and the meadowlark (report on the last having not yet been published); and in each of these instances there has been no feeding by regurgitation. This is known simply from the fact that the food has been visible in the bird's bill. It is quite possible, of course, that regurgitation may be found to be practiced by certain passerine birds, such as the flycatchers and the grosbeaks, and it is just such questions which can be settled by field observation. (I am not now considering the carrying of berries in the throat of a waxwing as coming under the definition of regurgitation.)

The reviewer's confession of limited experience in field work of this kind is sufficient reason in itself to make him more cautious of such vigorous, though quibbling, criticism.

It would seem that he is very skeptical of the value of field observations on the food of nestling birds in any case. It is to be assumed that he relies wholly upon the examination of stomach contents. But there are limitations to that method also. The examination of a stomach will give, at best, the story of only three or four hours of the bird's life. Even with the food mass in a watch glass, some of the material must be macerated beyond recognition. What is unrecognizable cannot

* Weed, Clarence M. An Observation on the Feeding Habits of the Chipping Sparrow. N. H. Agric. Exp. Sta. Bull. 55, 1898, pp. 101-110.

be taken into account, except as "unknown" or as "miscellaneous." If the tables or diagrams do not show this must we not conclude that the writer has discarded the unidentified material? Wilcox,* who examined over 200 stomachs of the robin in one year, says: "The determination of insect remains in the stomachs of birds is a very difficult and perplexing task, and one which is not all pleasant, since nearly all the material is in the very worst condition imaginable, and mutilated and partly digested fragments of several species of insects being mixed up in utter confusion. The elytra, mouth parts and tarsi are, of course, usually left to tell their tales, as are also the harder parts of all other insects, snails, myriapods and the seeds of the various fruits; but the soft bodied larvae and earthworms are too often macerated almost beyond recognition." (p. 118.)

Too often the adherent of stomach examination publishes only his percentage results, without the detailed data upon which his percentages are based, which are necessary in a strictly scientific piece of work.

Most ornithologists will concede that field observations on the food of birds possess certain advantages; those who have had much practice in this method will understand that it yields results with far greater accuracy than its critics are ready to admit.

No field worker, I presume, would claim that field observations alone would give us a full knowledge of the economic status of a species. It will be claimed, however, that such observations contribute to such knowledge very largely, if not with parity, in comparison with other methods. Furthermore, this method is not destructive of life, which would become a fact of importance in the study of any rare species. It is not particularly reassuring to read the boast of having killed so many thousands of nestling birds in order to determine what their food had been for the last two or three hours. The writer recognizes that under certain circumstances it may be justifiable, but nevertheless, in the judgment of many this criticism will apply to the stomach method.

It would seem, when a careful review is made, that the hypercritical apostle of stomach examination ought to be more cautious whither he slings. To paraphrase the reviewer's closing remark, what is needed above all on the part of iconoclastic reviewers is more certainty and less quibbling, and more hard work in the field and laboratory that there may be developed an appreciation of the difficulties to be encountered in productive effort.

Sioux City, Iowa.

* Wilcox, E. V. Bull. 43, Ohio Agric. Exp. Sta., 1892, pp. 115-131.

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